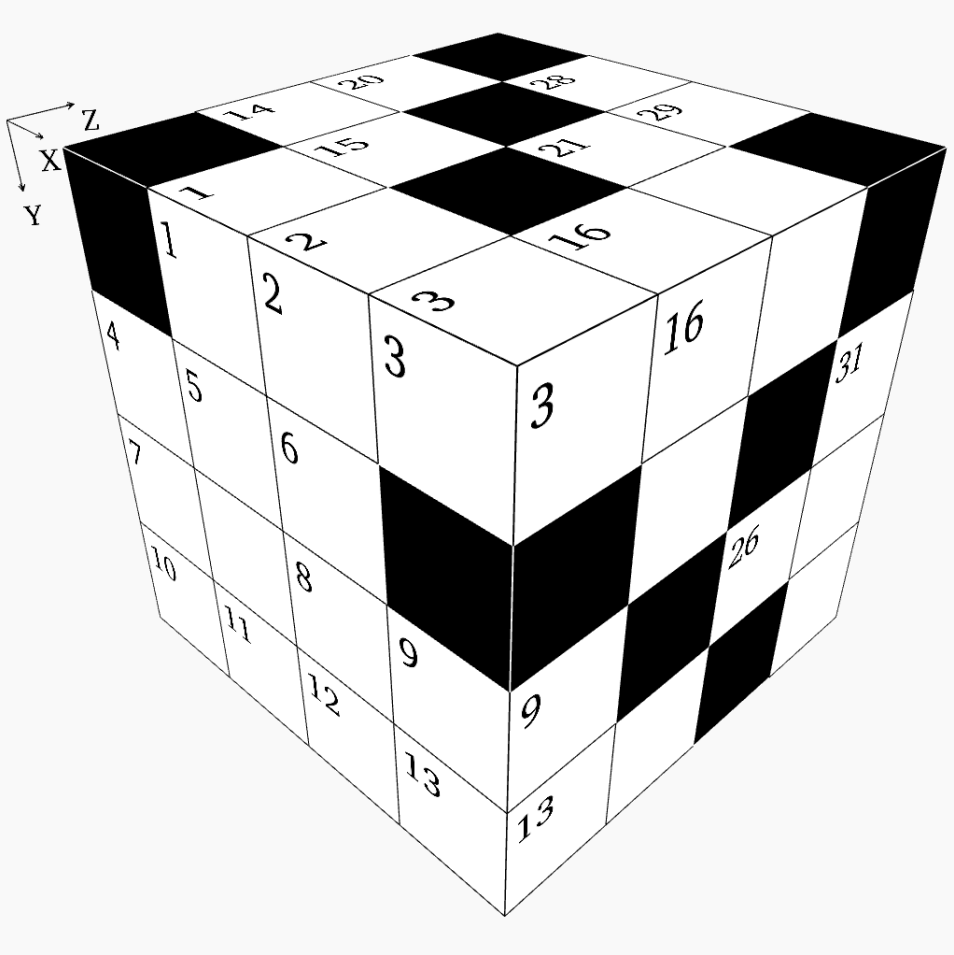
Difficulty: ★★☆☆☆

Cube - Challenging Puzzle #28

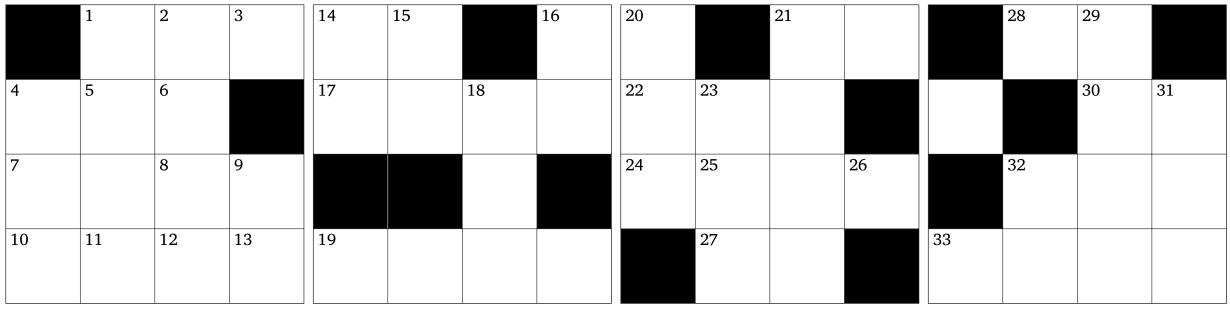


This puzzle is like a crossword, but with numbers. Each digit occupies a 3D block and can be a part of a "word" in the X,Y, and Z directions.

Rules:

1. "Words" may not start with a zero.
2. "Words" in the X direction read from left to right.
3. "Words" in the Y direction read from top to bottom.
4. "Words" in the Z direction read from front to back.
5. There is one unique solution which satisfies all the clues given below.
6. Some "words" may not have clues. They will be determined by the "words" which intersect them.

If we take the cube pictured above and divide it into individual X-Y layers, we will get these planes:



X Direction

1 Twice a prime number
4 Nine times X30
7 One hundred sixty-two less than Z6
10 Mean of Y1 and Y20
14 Y32 minus Z1
17 Five times a prime number
19 Mean of X24 and X30
21 X30 minus X27
22 Thirteen times a square
24 A prime number
27 Z14 plus Z13
28 Y9 plus Y16
30 All digits are the same
32 Mean of Z5 and X28
33 Nineteen times a prime number

Y Direction

1 A prime number
2 Mean of Z8 and Z4
4 Twenty-eight times Y15
9 Mean of Z21 and X28
14 Y32 minus Z1
15 Y32 minus Y16
16 Y23 divided by Z25
18 Five times a prime number
20 A prime number
21 Eight times a prime number
23 A square
29 Sixty times a prime number
31 Z5 minus Z25
32 Z25 plus Y15

Z Direction

1 Y9 minus X21
3 X7 minus half of Y4
4 Twenty-six times a prime number
5 Twice the result of Z6 minus X4
6 Three times a prime number
8 Twelve times a prime number
10 X27 minus Z26
11 Sixty-three times X27
12 X33 plus half of X1
13 Mean of Z26 and Z25
14 A cube
21 Z14 plus Z10
25 A square
26 Z10 plus half of Z1

Solution: